CLAIMS:

1. A detector for the detection of electromagnetic radiation, which detector includes at least one scintillator (6), at least one CMOS chip (3) and one ceramic basic element (4), wherein a respective intermediate layer (2) that is defined in respect of its gap width is arranged each time between the scintillator (6) and the CMOS chip (3) and between the CMOS chip (3) and the ceramic basic element (4), and wherein said intermediate layer (2) contains at least two adhesives (A, B) of different consistency and spacers (5).

2. A detector as claimed in claim 1, characterized in that the gap width of the intermediate layer (2) is determined by quantities of the adhesive (A) and a plurality of spacers (5).

3. A detector as claimed in the claims 1 and 2, characterized in that the adhesive (A) is a fast curing epoxy resin, cyanoacrylate or acrylate adhesive.

4. A detector as claimed in claim 3, characterized in that at least some quantities of the adhesive (A1) are applied directly to the rear surfaces of the CMOS chip (3) and the ceramic basic element (4) and that a plurality of spacers (5) is arranged between the surfaces of the CMOS chip (3) and the ceramic basic element (4).

5. A detector as claimed in claim 4, characterized in that the spacer (5) is a wire that consists notably of the materials Au and AlSil.

6. A detector as claimed in claim 3, characterized in that at least some quantities of the adhesive (A2) are applied to the surface of the scintillator (6) that faces the CMOS chip as well as to the bumps that are present on the CMOS chip (3).

7. A detector as claimed in claim 1, characterized in that the adhesive (B) is a low-viscosity adhesive, notably on an epoxy resin basis.

8. A detector as claimed in claim 1, characterized in that the ceramic basic element (4) is based on aluminum oxide.

9. A method of forming an intermediate layer between a CMOS chip (3) and a ceramic basic element (4), where spacers (5) and quantities of an adhesive (A1) are applied to a surface of the ceramic basic element (4) during the first step, where the applied quantities of an adhesive (A1) project from the spacers (5), where subsequently the CMOS chip (3) is placed on said quantities and is bonded and fixed while resting on the spacers (5) and quantities of the adhesive (A1), and where during a second step the gap remaining between the CMOS chip (3) and the ceramic basic element (4) is completely filled with an adhesive (B) which is applied to a side of the CMOS chip (3) in the horizontal position and enters the gap under the influence of capillary forces and is subsequently allowed to cure.

10. A method of forming an intermediate layer between a scintillator (6) and a CMOS chip (3), where at least quantities of the adhesive (A2) are applied, during the first step, to the bumps that are provided in optically inactive regions of the CMOS chip surface, after which the scintillator (6) is arranged on the bumps and is bonded and fixed while resting on the bumps and on the quantities of an adhesive (A2), and where in a second step the gap remaining between the scintillator (6) and the CMOS chip (3) is completely filled with an adhesive (B) which is applied to one side of the scintillator (6) in the horizontal position and enters the gap under the influence of capillary forces and is subsequently allowed to cure.

11. A method of forming a detector for the detection of electromagnetic radiation as claimed in claim 1, where first an intermediate layer (2) is formed between a CMOS chip (3) and a ceramic basic element (4) in conformity with claim 9 and subsequently an intermediate layer (2) is formed between a scintillator (6) and a CMOS chip (3) in conformity with claim 10.

12. An X-ray examination apparatus that includes at least one detector as claimed in one of the claims 1 to 8.